

From boatanchors@theporch.com Wed Jun 7 14:47:05 1995
Date: Wed, 7 Jun 1995 09:47:05 -0500
Message-Id: <Pine.BSI.3.91.950607103456.4976A-100000@laurel.us.net>
From: Tony Stalls <ras@us.net>
Subject: Re: Antenna throwing guns

There are plans floating around for a potatoe gun made from PVC pipe and powered by propane and an igniter of some kind. I understand that it'll shoot a potatoe a good distance... Maybe a couple of hundred yards. A friend (WA8VIJ) used one to throw an antenna line.

I have the plans somewhere in my discombobulated archiving system somewhere and if anybody is interested, I'll look for it.

73,
Tony
K4KY0

<ras@us.net>

From boatanchors@theporch.com Wed Jun 7 18:47:32 1995
Date: Wed, 7 Jun 1995 13:47:32 -0500
Message-Id: <MAILQUEUE-101.950607134342.416@vilas.uwex.edu>
From: "Terry O'Laughlin" <OLAUGHLIN@vilas.uwex.edu>
Subject: Re: Antenna throwing guns

> Next, I crossdrill the shaft back behind the fletching (i.e., feathers), to
> provide a hole for attaching nylon surveyor's cord to the shaft. BTW, I've been
> considering trying Kevlar kite string instead of surveror's cord.

Kevlar line is expensive. I fly stunt kites and Kevlar lines are great for their high strength in a smaller diameter. Kevlar lines cut through themselves, so they cannot be tied in knots unless they are sleeved before tying. When flying kites, Kevlar lines are best kept away from everything to avoid damage to the line (or another kite line, which they will cut). In a high abrasion situation, I'd stay away from Kevlar.

It is important to use surveyors line rather than nylon cord.
Surveyors line is braided and stretches very little in comparison to the garden variety nylon cord

73s Terry O'

From boatanchors@theporch.com Wed Jun 7 14:52:50 1995
Date: Wed, 7 Jun 1995 09:52:50 -0500
Message-Id: <Pine.BSI.3.91.950607103910.4976B-100000@laurel.us.net>
From: Tony Stalls <ras@us.net>
Subject: Re: B/A's in use

On Tue, 6 Jun 1995 Mike Veldman wrote:

> What a fun thread, I think I'll contribute. It seems like the
> majority of hams to visit my shack/lab always comment something
> to the effect: why do you have all this old equipment?
~~~~~

That's one of those infinitely profound questions like, "What's the  
meaning of life?" ;^)

73,  
Tony  
K4KY0

<ras@us.net>

From boatanchors@theporch.com Wed Jun 7 17:48:36 1995  
Date: Wed, 7 Jun 1995 12:48:36 -0500  
Message-Id: <9506071746.AA02479@ihurry.ih.att.com>  
From: Michael.J.Knudsen@att.com  
Subject: Re: B/A's in use

Asking "why you have all this old, uh, equipment" is  
like asking why it's wrong to kick a puppy to death.  
If you have to ask, you'll never understand the answer :-(  
--mike k

From boatanchors@theporch.com Wed Jun 7 14:25:45 1995  
Date: Wed, 7 Jun 1995 09:25:45 -0500  
Message-Id: <199506071423.IAA08597@atd.atd.ucar.EDU>  
From: owens@stout.atd.ucar.edu (Chip Owens)  
Subject: Collins front panel overlay

Does anyone know of a source for a front panel overlay

for a Collins 75S3 receiver? If so, please reply directly to me at the e-mail address below. Thanks very much!

Chip Owens, NW00  
owens@stout.atd.ucar.edu

From boatanchors@theporch.com Wed Jun 7 05:59:32 1995  
Date: Wed, 7 Jun 1995 00:59:32 -0500  
Message-Id: <9506070556.AA22431@texan.frc.com>  
From: bill@texan.frc.com (William Hawkins)  
Subject: distributing schematics

Following on Bob NA4G's comments about keeping it simple, it seems to me that a schematic diagram can be reduced to a parts location list and a wire list. That's location on the page, not in the set. This is all that a schematic is supposed to be - a connection diagram with shorthand symbols for the hardware. When you have a problem, you localize it to a stage (tube) and check it and the parts connected to it.

There was a lot of work done by wire lists in the 60's and 70's. Did anybody come up with a program that would draw a schematic from a wire list? Even if it hasn't been done yet, it could be done - then we'd have the equivalent of 'roff for schematics.

Entering a wire list from a boatanchor schematic (like an R-390) is a daunting job (except to someone who is dauntless). But, it could be distributed across several boatanchorites. Somebody does the locations, then each person takes one of the 25 or so tubes and enters its list. (Somebody else needs to describe the bandswitch :-). After a pass thru a program that removes redundant wire paths, you have a complete (well, almost complete) text description of an R-390 schematic. What you lose is the elegant style of the original draftsmen. But, you have something that can be distributed over the 'net with no loss of information.

Is this feasible? Has it been done?

Bill Hawkins bill@bvc.frc.com

From boatanchors@theporch.com Wed Jun 7 14:59:42 1995  
Date: Wed, 7 Jun 1995 09:59:42 -0500  
Message-Id: <m0sJMW1-0010JeC@spider.lloyd.com>  
From: jml@spider.lloyd.com (Jim Lockwood)  
Subject: Re: distributing schematics

At 12:58 AM 6/7/95 -0500, William Hawkins wrote:

>Following on Bob NA4G's comments about keeping it simple, it seems  
>to me that a schematic diagram can be reduced to a parts location  
>list and a wire list. That's location on the page, not in the set.  
>This is all that a schematic is supposed to be - a connection  
>diagram with shorthand symbols for the hardware.

There was about 10 years ago a schematic capture program called CADdroid which would generate component lists and wire lists, all in ASCII format. As I recall, the program came from Lucas Films and at the time ran on Sun Workstations.

I have no idea what its availability would be today, however, as a basic tool that would generate an easily transferred "schematic", I can vouch for its usability.

One potential drawback to using this or any schematic capture program to generate wire and component lists is the issue of component library maintenance. Not only does someone need to capture all or portions of the schematics, but someone also has to generate a library of components, tubes, resistors, transformers, rotary switches, etc. The job of creating and especially maintaining a component library is awfully close to Real Work(tm).

However in spite of that, the idea of shipping schematics around via ASCII wire lists is intriguing.

73,

Jim - km6nk

From boatanchors@the porch.com Wed Jun 7 15:37:02 1995

Date: Wed, 7 Jun 1995 10:37:02 -0500

Message-ID: <199506071533.LAA28639@altair.cs.unc.edu>

From: Nick England <nick@cs.unc.edu>

Subject: Re: distributing schematics

There are all sorts of programs for workstations and PC's that'll keep things as wire lists and component descriptions in ascii files and generate a schematic whenever you like - the problem is they have no intelligence about HOW the schematic is to be drawn - you almost always end up with schematics much worse than those for automobiles or military gear - lots of wires running hither and yon, but no engineer derived intelligence behind the placement of those wires. SPAGHETTI CITY !!

I'd suggest that a good drafting package standard would be better suited to our purposes than a schematic capture package. You need schematic capture (netlists, etc) to automate chip and board layout, testing, etc - but they really generate human-unfriendly schematics in general.

Let me toss out yet another alternative. Autocad .DXF files. Autocad is the world's most popular drafting package and runs on everything from PC's to MAC's to Sun's to SGI's to HP's to u-name-it. People make software to let you scan a document and create a .DXF file (that's how your local utility gets old drawings into machine readable form). Practically every CAD package known to man will import and export .DXF files. I believe that .DXF files are now required for govt documentation on architectural plans, etc.

Autocad is not all that cheap - but it is widely available. It has been pretty much the standard in personal CAD for the past decade. There are plenty of books and a couple of magazines devoted to it. And it has users whose concerns are much like ours - getting things off paper and into an archivable form.

And there are most likely cheaper drafting packages which have .DXF in/out.

Oh, did I mention Autocad will drive anything from a dot matrix printer to a pen plotter to a 48" wide electrostatic to a laserwriter to postscript files ?

I don't own any Autocad stock, just tossing out a recommendation - ask around.

Nick KD4CPL

From boatanchors@theporch.com Wed Jun 7 17:15:10 1995  
Date: Wed, 7 Jun 1995 12:15:10 -0500  
Message-Id: <9506071713.AA02270@ihurry.ih.att.com>  
From: Michael.J.Knudsen@att.com  
Subject: Re: distributing schematics

Good idea -- a schematic can be represented as a list of parts symbols, with orientation and pin numbers and sheet location, plus the "circuit topology" or wiring list.

BTW, has there ever been a complete schematic of an R390A? My manual set has the section-by-section diagrams, but no big road-map-sized foldout. There are big foldout sheets for wiring diagrams and exploded view

of the Swiss Army Cuckoo RF gear drive, but no total schematic.  
Maybe the original set has such a beast.

I have a foldout schematic for a Sony SW-77 digital allwave portable.  
Bigger and harder to fold back up than anything you ever got at an Esso station,  
it must be spread out on the floor or the bed to read (not handy for  
troubleshooting). But a VERY good schematic, and the word is it was  
designed and drawn in the US of A.

BTW, the R390A bandswitches have a lot of wires but are conceptually pretty  
simple. You should see (well, you probably have, most of you) the  
convoluted switching that goes on in a big home console Philco or Zenith,  
where to save bucks on coils, one coil does several jobs on different bands.  
My motto has become "If it ain't broke, don't try to understand it!"  
73, mike k w9nrd

From boatanchors@theporch.com Wed Jun 7 17:55:51 1995  
Date: Wed, 7 Jun 1995 12:55:51 -0500  
Message-Id: <9506071751.AA02508@ihurry.ih.att.com>  
From: Michael.J.Knudsen@att.com  
Subject: Re: distributing schematics

Right on, KM6NK -- tuffest job in CAD/CAM work is creating and maintaining  
the parts libraries. That I know from my day job.

Biggest headache for everyone is when an existing symbol gets updated,  
due to improvement or error discovered in the previous version.  
Replacing the new version into your schematic may cause problems  
if the "pins" don't correspond to the old ones, and be in the same place.

If someone could find a PD program, written in C or (ugh) Pascal for  
easy portability, with ASCII data files, then this project might  
make sense. But the "librarian" (an official title/job description  
around CAD/CAM shops) is gonna do some work, Real or not. --mike k

From boatanchors@theporch.com Wed Jun 7 18:26:42 1995  
Date: Wed, 7 Jun 1995 13:26:42 -0500  
Message-Id: <199506071819.0AA22866@gatekeeper.ddp.state.me.us>  
From: afpgreg@gatekeeper.ddp.state.me.us (Paul V. Gregory)  
Subject: Re: distributing schematics

Ahoy ,

This thread has lulled my bum to sleep.  
Why bother when there're photstat machines and snail? So call me a  
Luddite, but then again, so are you to some degree.

--Paul

From boatanchors@theporch.com Wed Jun 7 16:55:26 1995  
Date: Wed, 7 Jun 1995 11:55:26 -0500  
Message-Id: <9CA2D52F013CD8D1@usia.gov>  
From: "Seifert, Rick" <rseifert@usia.gov>  
Subject: Drake's Bill Sullivan?

Hello everyone,

I'm finishing up a paper concerning the R.L. Drake company's liaison with Radio New York World Wide, WNYW back in the 1960's. I understand via Bill Frost at Drake that their chief design engineer,

a fellow by the name of Bill Sullivan, was responsible for many Drake products of the time, including the R-4's, 4-C's etc. I'd like very much to talk with him about his recollections from that time. While calls to Drake have been helpful, they refuse to divulge, or don't know of his whereabouts. And there don't seem to be many folks left at the plant that go back that far.

Anyone out there know of his whereabouts, or about him?

Thanks in advance:-)

Rick

Rick Seifert rseifert@usia.gov

Radio Marti Tech Ops (202)401-7104

400 6th Street S.W. fax(202)401-7623

Washington, D.C. 20547

From boatanchors@theporch.com Wed Jun 7 18:32:06 1995  
Date: Wed, 7 Jun 1995 13:32:06 -0500  
Message-Id: <9506071820.AA26984@us2rmc.zko.dec.com>  
From: harlan@csoa1.enet.dec.com  
Subject: Fair Radio trip

Yo' All,

I went to Fair Radio yesterday (D-Day+51yrs) and got a couple of R390A's from the used repairable stack. The price is still 175 bucks and the crew down there does a great job making sure you get everything to make it complete.(less covers and meters of course)

One unit has a '52 Collins dogtag but the inards are mostly MOT. The other is a '63 Teledyne with teledyne subchassis except cosmos pto. Both units have a good 3TF7 and the Collins one had the BFO Knob turns counter.

The meters that have been referred to here the last week or so are all gone,as are all of the meters that even look like they would "fill the hole".

They do have a few R390A's with meters and covers checked for \$370.

73 Dan Harlan

From boatanchors@theporch.com Wed Jun 7 18:58:08 1995  
Date: Wed, 7 Jun 1995 13:58:08 -0500  
Message-Id: <v02110107abfba665ca21@[140.243.30.128]>  
From: steve@hi.com (Steve Byan)  
Subject: Re: Fair Radio trip

> I went to Fair Radio yesterday (D-Day+51yrs) and got a couple of R390A's from the used repairable stack. The price is still 175 bucks >and the crew down there does a great job making sure you get everything

>to make it complete.(less covers and meters of course)

Anyone know how Fair defines "used-repairable"? Is it the ones that don't pass the "checked-working" standard, or is it just the top of the pile?

Thanks,  
-Steve

Steve Byan internet: steve@hi.com  
Hitachi Computer Products (America), Inc.  
1601 Trapelo Road phone: (617) 890-0444  
Waltham, MA 02154 FAX: (617) 890-4998

From boatanchors@theporch.com Wed Jun 7 22:21:45 1995  
Date: Wed, 7 Jun 1995 17:21:45 -0500  
Message-Id: <9506072219.AA20172@ihurry.ih.att.com>  
From: Michael.J.Knudsen@att.com  
Subject: Re: Fair Radio trip

Say, what's with the R390A BFO knob tunrs counter?  
Did some sets have a BFO you could turn more than the stock 300 degrees,  
from -3 to +3 KC? COuld you get a lot more BFO offset,  
or was there a vernier reduction (would be nice for SSB or using that  
sharp audio CW filter)?

Does Fair or anyone else have dust covers? Or should I go ahead and make a Plexiglas top cover, to show off the workings? Tnx, mike k w9nrd

From boatanchors@theporch.com Wed Jun 7 22:48:05 1995  
Date: Wed, 7 Jun 1995 17:48:05 -0500  
Message-Id: <9506072246.AA20341@ihurry.ih.att.com>  
From: Michael.J.Knudsen@att.com  
Subject: Re: Fair Radio trip

Heh heh, there's an old joke about any outfit that sells two categories of stuff, "Tested OK" and "Untested." If you don't know that the latter category includes "Test BAD" then you should be buying classic bridges, not radios :-)

"user-repairable" should mean complete, and no physical or chemical (corrosion) damage. With teh R390A's modular construction, this could be stretched a loooonnnng way. Gears bent up and rusted together? Hey, no problem,

the "user" can replace the RF assembly, we got one here for \$150.  
--mike k

From boatanchors@theporch.com Wed Jun 7 23:52:23 1995  
Date: Wed, 7 Jun 1995 18:52:23 -0500  
Message-ID: <n1409571464.42708@msmailgw1.arlut.utexas.edu>  
From: "rohre" <rohre@arlut.utexas.edu>  
Subject: Fwd of For Sale, HB rigs, Arc 5, misc.

These are posted for a friend, Herb Zinsmeyer, WA50XP. I have seen all these and they are as described.

Contact him if interested, Central Daylight time before 9 PM please: Home: 512-454-3355 Work: 512-346-8514

1. Fine desk cabinet of Hallicrafters style used for SX-100, etc., containing a homebrew CW-AM 80M-10M transmitter with 10 each, plug in, link coupled coils. Final is 807, with commercial shield can around it. (An unused shield can like this is in a parts box of components, these are rare) Rig contains rare coil sockets, and crystal sockets, and is of quality construction like old ARRL Handbook rigs. Built by a craftsman. The cabinet is indeed the piano hinge type like seen on many Halli receivers, with perforated cover and sides. \$75

2., 3., 4. Sold as a group: AC power supply with OC3 and OD3 regulators set up with an octal plug cable for converted ARC5 type transmitters. There is complete documentation on this power supply, and on the two transmitters that go with it. There are tuning charts to get the one ARC 5 onto 80 Meters: Original dial, 4-5.3 MHz ARC 5 transmitter, few modifications look like factory, has S0239 for antenna post, and octal power connector on rear, very neatly done. There is also a 7-9.1 M Hz transmitter, (BC-459), with the same antenna connector and power connector conversion, and of course this one is 40M as it stands. Covers, dials, all original, silver cases. \$100 for the three items, includes all conversion documentation of the power cable, transmitters, etc.

5. Audio preamp, processor? home brew with docs, in nice Radio Shack cabinet; \$5

13. Realistic (Radio Shack) AC powered RF signal generator, with circular dial, 120 kHz to 200 M Hz calibrated scales. \$10 manual may be available. This is the standard radio service shop type of the 60's.

15. Heathkit IO-21 audio range oscilloscope, with 3 RP1 tube, (3 inch), 200 kHz rated, "excellent performance", manual, \$25.

16. 2 each potted Cordova or similar phone patch modules, \$1 each with

instructions. Have shielded audio lead, and other wires coming out of a pyramid of epoxy.

19. MX 41 AR military headphones with rubber ear cups in good condition-\$15

20. Western Electric ANBH-1 headphones with padded ear covers-\$15

23. QST's , 4 cartons worth covering from late 50's to 70's at least, probably the 80-and half of 81 issues were lost to a flood. These others were in the attic at time of flood and escaped. \$60 for the lot.

now the answer to the question you all have been asking, what is with the numbers in front of the items not being sequential? As we were going through boxes, I listed other boxes that are heavy items like power transformers, lots of computer grade 35 Volt electrolytics,( from a power supply building business), heat sinks, and assorted large switches, audio cables etc. that are not mainly BA items. If you are looking for variable capacitors, and coils, Fred's ham son took those.

Fred may later sell a home brew grounded screen 4-1000 all band linear from the Radio Handbook by W6SAI, 51 foot Tri Ex tower with winch, and some other items, you could ask him what else he has.

What was impressive about all the home brew stuff, some of which was from his ham father in law's estate some years ago, are the detailed construction notes and calculations for tuned circuits, original article copies, etc.

From boatanchors@theporch.com Wed Jun 7 13:57:42 1995

Date: Wed, 7 Jun 1995 08:57:42 -0500

Message-Id: <199506071355.JAA27982@service1.uky.edu>

From: wlfuqu00@service1.uky.edu (Bill Fuqua)

Subject: General Electronics transmitter

Looking for a General Electronics novice transmitter. This was my first novice rig. It had a crystal controlled 6CL6 oscillator, 807 final and 5U4 rectifier. One plug in coil and link coupled to antenna. All above chassis parts exposed, no shielding. Operated 80 and 40 meters about 75 watts plate input power. CW only.

If anyone has any info about this rig, model, etc., please let me know. It really was not a very good rig only got a few contacts on it before it went up in smoke. I replaced it with a challenger.

73

Bill ko4ww

William L. Fuqua III P.E.  
Department of Physics and Astronomy  
CP-177 Chem. Phys. Bldg.  
University of Kentucky  
Lexington, Ky 40506-0055  
E-mail WL FUQU00@POP.UKY.EDU  
Phone (606) 257-4155

From boatanchors@theporch.com Wed Jun 7 20:16:33 1995  
Date: Wed, 7 Jun 1995 15:16:33 -0500  
Message-Id: <199506072013.NAA16454@ix5.ix.netcom.com>  
From: bobszabo@ix.netcom.com (Bob)  
Subject: Hammurlund HQ-100C FS

I have a Hammurlund HQ-100C to sell and was wondering what a good asking price for the radio would be. It works fine and looks good too. I would like to get a modern radio with SSB and memory banks to replace it and would be interested in a trade if one comes along. My main interest is in Military monitoring. I live in the Northern, VA D.C. area. Please send E-mail directly to me at bobszabo@ix.netcom.com since I am not a subscriber to this list. Thanx!

Bob Szabo

From boatanchors@theporch.com Wed Jun 7 12:36:43 1995  
Date: Wed, 7 Jun 1995 07:36:43 -0500  
Message-Id: <qgsB7c1w165w@mindvox.phantom.com>  
From: digger@phantom.com (Lenny Tamulonis)  
Subject: Help cleaning aluminum panel?

Picked up some BA test gear at a local flea. One is a Sylvania 302 Polymeter VTVM that the seller said a friend had stored in his barn when he left for Florida 10 years ago. The inside is pristine but the aluminum front panel has some spattered stains that are strongly visible when the light hits it from the side. They won't come out despite a ride in the dishwasher and plenty elbow grease and soft soap. I suspect something caused a change to the chemistry of the metal. Anybody have any ideas for cleaning/restoring this panel? Thanks!

My \$.02 worth, and worth every penny!

-----[ digger@phantom.com ]-----

From boatanchors@theporch.com Thu Jun 8 00:01:00 1995  
Date: Wed, 7 Jun 1995 19:01:00 -0500  
Message-Id: <SA06+DlXpjA@bangate.compaq.com>  
From: Dave=Sharp%Legal%Corp=Hou@bangate.compaq.com  
Subject: re: Its a legal question...

Jack taylor writes:

>First, even though it is a Department of the Army Technical Manual, it  
>contains a reprint of the Collins instruction manual which indicates it's  
>copyrighted by Collins Radio Company. Obviously the govt got the OK from  
>Collins to use their instruction manual in the TM, but where does that leave  
>us? The TM does include a statement "TM 11-5820-530-15, is published for  
>the use of all concerned. By Order of the Secretary of the Army:" Does  
>this include OUR use (as an on-line manual)? A legal question here.

Dave (not a lawyer - but lives within a stones throw of a hundred of them rascals) responds:

The unofficial and sure to be denied consensus around here is:

That Uncle Sam probably got approval from Collins to reprint that part or manual but agreed to leave the Collins copyright. Probabaly for work that US did not pay Collins for.

Collins DOES retain their copyright on the work.

Rockwell, bought Collins thus owns all the assets of Collins unless they were specifically sold, given, or otherwise disposed of.

As a user of the equipment you probably have reasonable rights to copy the manual for your own use but not for others.

If Rockwell still has ANY interest in this stuff, they would be the ones to make the final statement.

As a practical matter, the most they would probably do is ask you to recover all the copies you made assuming you did not do this as a "for profit" action.

In reality Collins still holds a venerated name because of the quality of their gear and as long as it is still "out there" being maintained by someone, they still attain some status benefit from that longevity and public approval.

Owning Collins is kinda like owning the Cropwn Jewels. Everyone wants one or even a photo of one. Since no one can buy the jewels themselves, each photo makes the originals more valuable. It's a status thing. Besides Rockwell makes some pretty good chips.

In other words - go ahead and make an electronic book shop of the BA stuff and see what happens. At least do it in the style and quality of the original Collins stuff. Ruffle the fewest feathers or maybe leave a legacy of something even better to add luster to the Collins emblems for years to come.

Dave Sharp  
Houston, TX USA  
dave=sharp%legal%corp=hou@bangate.compaq.com  
Eagles, like other leaders don't flock - you find them one at a time.

From boatanchors@theporch.com Thu Jun 8 03:32:33 1995  
Date: Wed, 7 Jun 1995 22:32:33 -0500  
Message-Id: <199506080328.WAA03037@uro.theporch.com>  
From: Jack Taylor <n7oo@hereford.ampr.org>  
Subject: re: Its a legal question...

Hi Dave, thanks for your response! Beginning to suspect the safest recourse to follow is to contact both Rockwell and the Department of the Army; explain what it is we're about and ask for permission.

There's just a wee chance one or both parties might agree to use THEIR resources to set up an electronic archive. From our own selfish view, this would be the most satisfactory solution. However, I'm not in the least bit optimistic it will happen...but you never know.

Meanwhile, I just got a verbal OK from the Arizona state army mars director to make use of their tech manual library, which I'm told is rather extensive. All-in-all, this project sounds like an AWFUL lot of work to me. Think I'll take an aspirin and go to bed!

73 de Jack

From boatanchors@theporch.com Wed Jun 7 07:38:17 1995  
Date: Wed, 7 Jun 1995 02:38:17 -0500  
Message-Id: <9506070736.AA21895@alpha>  
From: Duncan Cadd <dcadd@luc.ac.be>

Subject: low melting alloys

Greetings, Anchorites, from an overcast and maybe rainy later Diepenbeek!

Having done some searching yesterday evening in the OLD edition (1960) of the Handbook of Chemistry and Physics, there is another low-melting alloy which does not use cadmium. Thus we have two to play with:

|            |          |             |           |          |       |
|------------|----------|-------------|-----------|----------|-------|
| Formula 1: | Lead 40% | Bismuth 60% | mpt 126 C | 259 F    |       |
| Formula 2: | Lead 32% | Bismuth 53% | Tin 15%   | mpt 96 C | 205 F |

The second of these ought to just melt in boiling water, but probably not at 8000ft in Ouray, CO where Bob Wier is!

Sources of metal:

#### LEAD

Stay away from wheelweights, lead shot, type metal (Linotype etc) as these all have more-or-less variable composition and contain antimony (so keep well away from the ex-wife to avoid violent explosions) which will increase the mpt. Scrap lead pipe is OK, plumbers suppliers or reloading houses will also have it. Avoid old battery plates like the plague. They contain arsenic and calcium, and the dross from melting these reacts with moisture, either in the shack or the garbage and generates ARSINE AsH<sub>3</sub> which is a very poisonous gas! If it smells like garlic/bad onions, RUN (assuming you still can . . .) [There may be stibine SbH<sub>3</sub> produced from the antimony - this is also nasty, but not as bad as arsine.] We can also use bar solder for part of the lead - see tin below.

Pure lead has mpt 327 C 621 F.

#### BISMUTH

Reloading houses / gun shops may have either bismuth shot or shotgun cartridges loaded with bismuth shot which can be broken down etc. Mpt 271 C 520 F.

#### TIN

Best bet is DIY / plumbers suppliers. Bar solder is usually 50:50 lead/tin and melts at 225 C 437 F. Some bar solder is 2/3 lead 1/3 tin and melts 275 C 527 F. Pure tin melts 232 C 450 F.

Making formula 1 is obviously straightforward.

Formula 2 is a bit easier if you get 2/3 : 1/3 bar solder. 3 1/8 oz of this with 3 1/2 oz bismuth is a very close approximation. Using the 50:50 solder, you need 2 oz solder, 1 1/8 oz pure lead and 3 1/2 oz bismuth.

Obviously it'll take a fair bit of heat to melt these things together initially - if dross forms whilst doing it, take some wax shavings from a candle, drop them onto the molten metal and ignite the vapours with a match. Stir well, and all should be fine.

Hope this is useful!

Duncan GOUTY / ON9CHU G-QRP 8117

From boatanchors@theporch.com Wed Jun 7 14:03:06 1995

Date: Wed, 7 Jun 1995 09:03:06 -0500

Message-Id: <v02110101abfb60775bf6@[140.243.30.128]>

From: steve@hi.com (Steve Byan)

Subject: Re: low melting alloys

You can find several types of low-melting point alloys at any model railroad hobby shop. They may not stock it, but they should be able to order it from Walthers, one of the major distributors for that market. As I recall one type is "Walther's Temp-Low". Another type is "Cerro-bend"; I believe the Cerro Co. markets several formulations with different temperature expansion/contraction coefficients. Ask to look at the store copy of the current Walthers catalog.

Regards,  
-Steve

Steve Byan  
Hitachi Computer Products (America), Inc.  
1601 Trapelo Road  
Waltham, MA 02154

internet: steve@hi.com  
phone: (617) 890-0444  
FAX: (617) 890-4998

From boatanchors@theporch.com Wed Jun 7 06:11:59 1995  
Date: Wed, 7 Jun 1995 01:11:59 -0500  
Message-Id: <060695211250Rnf0.79b6@ham.island.net>  
From: rsmits@ham.island.net (Robert Smits)  
Subject: Re: More on crossbows

TOM.A.ADAMS@mail.admin.wisc.edu writes:

> As an example of the power level we're talking about, consider my first test  
>shot after obtaining the crossbow. I fired indoors (garage) at 2 panels of 3/4"  
>marine plywood, 35 feet away. A field point went thru them like they weren't  
>there, proceeded thru 3/4" of particleboard wall, 1.5" of styrofoam insulation,  
>another 3/4" of particle board, the wood siding outside, and finally stopped  
>with the plastic fletching half torn away on the first plywood sheet, and the  
>majority of the bolt's length waving in the breeze outside of the garage.

I use a 90 pound bow myself, and concur with the possible damage. Which is why I use the flat blunt heads, and only aim them away from people or houses. If the cord breaks, it can easily go 1500 feet.

>  
> Tho it seems like this is grossly too powerful for the job of launching an  
>antenna line, it's not. Towing a cord behind saps the bolt's energy very  
>quickly, as I found with the small pistol-type crossbow I tried (using fishing  
>line) initially. With the pistol, I found the practical tree height limit to  
>be about 35 feet, and the energy loss was so great that there was no accuracy;  
>getting a line over the limb you wanted was sheer luck. Besides that, the bolt  
>a pistol fired was so light that it frequently wouldn't carry enough line down  
>the other side of the tree to put it within reach.  
>

I use fishing line taped to the side of the crossbow bolt. I also have an assistant standing next to me with a spincast fishing rod ready to unreel and about a hundred feet laid out on the ground. This allows me to put a line over any tree in my yard (120 ft plus), then pull nylon 1/8 in starter cord up into the tree with the fishing line.

--  
rsmits@ham.island.net (Robert Smits VE7HS)

From boatanchors@theporch.com Wed Jun 7 17:58:50 1995  
Date: Wed, 7 Jun 1995 12:58:50 -0500  
Message-Id: <PMX-TERM-2.02-bsm2ee1-thaake-237>  
From: thaake@bsm2ee1.attmail.com (thaake)  
Subject: MOTTO

Mike-W9NRD,

Regarding you motto,

"If it ain't broke don't try to understand it".....

I thought I was the only one who was keeping this feeling in the closet!!!

I have suffered from information overload within my profession and that has I suspect influenced my affliction with BAs (or was it just the sheer weight). Anyway I learned what I know back in my youth days when learning is suppose to be easier (so they say but I can't remember). Not that I don't want to learn anymore, just ain't as easy as it was awhile back. Well the BAs challenge me enough and I want to enjoy something so my 25Watt soldering iron doesn't see much use these days. Now the Weller 100/140 gun there's a welcome fellow. He's got a twin brother and Dad over there in the drawer he's an American Beauty running 300W for the big jobs.

My point is I loose ground on the SS world every day building some incredible frustration you know while for some stupid reason I think I can "gain" on the vaccum tube world. Like it ain't going to pass me by and leave me for dead like the SS science has.

Mike, please don't charge me for the couch time. I also can't afford that anymore either....

Tim WA0TSY  
thaake@bsm2ee1.attmail.com

From boatanchors@theporch.com Wed Jun 7 22:17:04 1995  
Date: Wed, 7 Jun 1995 17:17:04 -0500  
Message-Id: <9506072215.AA20155@ihurry.ih.att.com>  
From: Michael.J.Knudsen@att.com  
Subject: Re: MOTTO

Tim, you hit the nail on the head. I think my re-immersion into boat anchors (whether mahogany or metal enclosed) co-incided with my realization that everything I was learning and using today is junk tomorrow.

About 4 years ago I had a great time learning to write Mac-like application interfaces in SunView. I remarked to someone how much more marketable that made me, and he said "But X-Windows is replacing everything." Yep, some MIT grad-student hackers' project really did displace Sun's industrial product.

So my view is not to learn anything new unless it's old, other than what I need to survive.

Same goes for material possessions. I have one MSDOS PC, a 286 I got used when the 286 was already a bit stale. I refuse to buy a new computer every year. But I know my Atwater-Kents and Hammarlunds won't get any more obsolete than they already are (until all broadcasting and comm are done via satellite or subspace radio, which hopefully I won't live to see).

I work here designing the most advanced circuit boards with incredible custom chip technology. You literally cannot see the individual chip pin legs anymore. And don't try to fix anything. But I can't get emotionally attached to this stuff anymore, cuz it will be junk soon.

They can't take away our tube gear, or our CP/M box, or windup phonograph, cuz they're already "gone." That's the real value of antiques.

73, mike k

From boatanchors@theporch.com Wed Jun 7 19:37:30 1995

Date: Wed, 7 Jun 1995 14:37:30 -0500

Message-Id: <memo.801882@cix.compulink.co.uk>

From: oddjob@cix.compulink.co.uk (Stephen Walters)

Subject: Re: National HRO

In-Reply-To: <memo.721346@cix.compulink.co.uk>

This is National HRO mode 5T also badged R106 Mk2 built about 1945....

oddjob@cix.compulink.co.uk

> I have just acquired a National HRO with ONE coil pack (anyone in the  
> UK want to sell me the rest!) but a missing speaker. Now Ideally, I'd  
> like the missing speaker, but in the meantime, I'd like to use it.

>

> The external HRO speaker apparently as a matching transformer, any idea  
> of the spec? I believe to output imp of the radio is very high and the  
> speaker was 3ohm?

>

> Any data anybody, service manuals would be nice too.

>

> Stephen Walters 42 Achilles Rd, London, NW6 1EA, United Kingdom.

> Tele 0956-544202.

> oddjob@cix.compulink.co.uk

> .....I'll be G0??? when I get my licence.....!!!

>

From boatanchors@theporch.com Wed Jun 7 21:39:38 1995  
Date: Wed, 7 Jun 1995 16:39:38 -0500  
Message-ID: <n1409579460.56957@msmailgw1.arlut.utexas.edu>  
From: "rohre" <rohre@arlut.utexas.edu>  
Subject: Non toxic galena holders

Crystal sets!

Duncan, hello to you this evening in Belgium. Hope wx is improving there--thanks for the precautions on molding holders for galena crystals for detectors.

Now, some of the risks alarm me to post what was used in my father's crystal set galena holder. It was a commercial one available for kits built in the '20's.

If I am correct, the material was simply a brass tube, chrome plated, or cadmium plated on the outside. The crystal of galena was polished to a cylinder with a rough end. The cylinder stood upright clamped tight in the tubing, and one side of the circuit connected to the base of the tubing, and there was a glass cylinder around this slug. The top of the glass had a metal cover with a center hole, with a lever that contained a cat whisker at its end to touch the galena. The ball bearing around the lever completed the circuit to the metal lid, and on one side of the lid was a bolt and nut holding the lid tight and a clamp over the ball, and carrying the other side of the circuit to the set.

I vaguely remember pictures of other holders that were brass, with a clamp screw to hold the galena in a vise like arrangement, with the point of the whisker contact coming down from a spring affair as the other side of the detector.

Thus, no need to cast smelly alloys of dangerous properties! I would imagine the only concern is that the brass to galena interface NOT form another semi-conducting junction, ie any metal for the holder should not be widely spaced in the galvanic series from the properties of the galena.

BTW, could anyone comment on the material of the whisker? It appeared to have been a steel spring material, before I lost it out of my father's set.

I know my Boy's Book of Crystal Sets talks of using opened up steel safety pins like used on baby diapers for the home made cat's whisker, but I was wondering if there was an optimized material now lost to history?

(I never heard anything try as I could on my father's rig, as they moved the broadcast band by the time I found the thing, and he let me have it to experiment with) It was some time later, that I learned the coil did not have enough inductance to tune the present AM MW band unless a capacitor was placed across it. YES, it was a coil only tuner, with only stray capacitance to help

it along!

From boatanchors@theporch.com Wed Jun 7 14:00:18 1995  
Date: Wed, 7 Jun 1995 09:00:18 -0500  
Message-Id: <Pine.3.89.9506070819.A6009-0100000@indy2>  
From: "Roberta J. Barmore" <rbarmore@indy.net>  
Subject: Oh, wow!

Hi, Anchorites!

I just got some very interesting news from my boss: 'tis said I shall be named Chief Operator of the station!

This is an FCC-legal sort of title; "Chief Engineer" hasn't been in the rulebooks for years. Nor is it a promotion; I might see a little more money from it, I might not. My boss remains Chief Engineer (a title within the company), and his boss is the Director Of Engineering, answering to the GM. (Hey, there's two levels down from me, the Ops and Production crewbeings--I'm semi-middle non-management, I am).

Still, it's quite a pat on the back! The CO has primary responsibility for compliance with what passes for FCC regulation these days; so the Dir of Eng must have some confidence that I won't run the station off a cliff.... :) (Then again, "CO" sounds like I'm the number one head boss telephone gal--may be having to keep "Senior Electronic Maintenance Tech" on those non-existent biz cards just to keep things clear).

Just wanted to share the news!

73,  
--Bobbi

From boatanchors@theporch.com Wed Jun 7 14:42:24 1995  
Date: Wed, 7 Jun 1995 09:42:24 -0500  
Message-Id: <9506071431-AA01733@etn.com>  
From: doonan@cordmc.dnet.etn.com (Dennis Doonan x6916 (N9VSL))  
Subject: RE: Oh, wow!

Way to go. Congratulations. I'll have another cup of coffee to celebrate. BTW, titles do not mean much. I transferred locations and went down in title but up in pay and have a nicer lab to play in at noon.

73 de Dennis

From boatanchors@theporch.com Wed Jun 7 14:50:53 1995  
Date: Wed, 7 Jun 1995 09:50:53 -0500  
Message-Id: <199506071448.KAA03508@netcom6.netcom.com>  
From: azoth@netcom.com (Az0th)  
Subject: Re: Oh, wow!

Yo Bobbi,

> I just got some very interesting news from my boss: 'tis said I shall  
> be named Chief Operator of the station!

Careful, they may make you buy the bubbly for the celebration brunch! ;-)

Excellence, of course, is very much its own reward, but it's nice that occasionally somebody else notices, too.

Congratulations!

73 de RF Buchanan

--

We attained to be starry grains of gold dust in the sands of a slow river. --- LIBER LIBERI VEL LAPIDIS LAZULI - V:17.

From boatanchors@theporch.com Wed Jun 7 18:53:48 1995  
Date: Wed, 7 Jun 1995 13:53:48 -0500  
Message-Id: <2FD61F3E@smtpgate.rfc.comm.harris.com>  
From: "Gable, Edward M" <emg@rfpo2.rfc.comm.harris.com>  
Subject: RE: Oh, wow!

I just got some very interesting news from my boss: 'tis said I shall be named Chief Operator of the station!

Just wanted to share the news!

++++++  
Bobbi - Congratulations ! Does that mean you can turn the screws and put the big rig on 160 now ?

Regards,

Ed K2MP@Rochester  
emg@rfc.comm.harris.com

From boatanchors@theporch.com Wed Jun 7 10:46:45 1995  
Date: Wed, 7 Jun 1995 05:46:45 -0500  
Message-Id: <9506071046.AA00802@bobcat.etsu.edu>  
From: wier@bobcat.etsu.edu (Bob Wier)  
Subject: RE: Old BA Haunts

|  
|Anyway has anyone out there in BA land had any experiences with Walter Ashe or  
|Bill Dubough at the "Ham Radio Center" or perhaps Gateway back in the days  
|when Gateway had pure heavenly MIL SPEC junk??  
|  
|Tim WA0TSY  
|thaake@bsm2ee1.attmail.com

Hi Tim & others -

About 1972 I bought a model 19 Teletype machine from the Denver store (I \*think\* it was Gateway). That was the printer plus tape perforator/reader. Weighed maybe 150 lbs. A friend and I carted it back to Boulder in a VW Mini bus and up 3 flights of stairs to the University Ham Shack at the U of Colo - I operated RTTY out of W0YQ for a couple of years with a HEATH SB101 - it actually did pretty well, although the continuous duty strained the power supply that eventually it went up in smoke (set off all the fire alarms in the student union building where the shack was located - boy was that embarrassing!).

I wonder if they still have that model 19 :-)

THANKS & 73 de WB5KXH

===== Round Up the Usual Disclaimers! =====  
Bob Wier, keeper of the Photo-3D, Icom radio (WB5KXH),  
Overland Trails, and Motorola HC11 mailing lists  
wier@bobcat.etsu.edu

currently in Ouray, Co at 8,000 ft. elevation  
(this is a \*high level\* system :-)

From boatanchors@theporch.com Wed Jun 7 17:53:32 1995  
Date: Wed, 7 Jun 1995 12:53:32 -0500  
Message-Id: <199506071751.MAA25906@uro.theporch.com>

From: Jack Taylor <n7oo@hereford.ampr.org>  
Subject: on-line manual formatting

I don't have a TM for the BC-221 with which to make an ascii file, as Bob requested. However I do have a short TM covering the Collins 312B-4 and 312B-5 (these are the station consoles for the KWM-2/A). In looking through this, I see several things.

First, even though it is a Department of the Army Technical Manual, it contains a reprint of the Collins instruction manual which indicates it's copyrighted by Collins Radio Company. Obviously the govt got the OK from Collins to use their instruction manual in the TM, but where does that leave us? The TM does include a statement "TM 11-5820-530-15, is published for the use of all concerned. By Order of the Secretary of the Army:" Does this include OUR use (as an on-line manual)? A legal question here.

Second, there are numerous low contrast photographs of the equipment which would show up as a poor scanned image, if they were to be included in an electronic version. To include photos would be desirable (in my opinion) as they are useful in not only identifying the appearance of the equipment, but in many cases the photo's reveal component and test point locations.

Third, the manual contains several different font sizes as well as font styles. These occur not only in the body of the text, but also in some of the illustrations and diagrams. Even if we come up with an ascii format for some of the interconnecting (line) diagrams, it would be useful to control the font size so's to squeeze the descriptive words into appropriate places.

Fourth, this manual contains tables, charts, as well as schematics and line drawings. It would be desirable to have all of these available for reference.

I'm beginning to believe the magnitude of this project is such that it's going to take WORK! specially so if we are wanting to output a fresh, crisp professional looking publication with sharp photos, schematics and illustrations. Basically it would require shooting new photos, re-doing/cleaning up schematics and illustrations as well as a formating effort.

To me, the least labor intensive approach is beginning to look like re-doing the TM with a popular word processor such as Word For Windows (which someone on the net said Microsoft had a free viewer). This way, font and format can be closely set to the original and scanned images (good quality or not) can be included into the appropriate portions of the document.

It's my understanding that today's popular word processors have conversion capability to accept documents prepared on certain competitive word processors, so this approach may not be as restrictive as originally though. As software techniques change, there's the good likelihood there will be converters available allowing the user to modify the older technology so's

to be compatible with the current.

For example, I'm not familiar with how the WWW does it, but I do know when I click on a picture or a file, the printer output is the same as seen on the screen (with the exception of my printer capabilities being a limiting factor). I have no idea of how, or with what software, original files on the web were prepared but I haven't (yet) experienced any compatibility problems with layout and formatting on my home system.

73 de Jack

From boatanchors@theporch.com Wed Jun 7 15:02:02 1995  
Date: Wed, 7 Jun 1995 10:02:02 -0500  
Message-Id: <01HRF5F0YQXU9KPRZS@RANDB.PPRD.Abbott.Com>  
From: KANAMAA%AMGATE%MATRXA@randb.pprd.abbott.com  
Subject: Passive Boatanchor Projects

From: Kana, Michael (D9CY)  
Date: Wed, Jun 7, 1995 10:07 AM  
Subject: Passive Boatanchor Projects  
To: bigboats  
Howdy all

All this crystal set talk got me ta' wonderin'....  
Are there any choice books on the fine art of crystal set construction  
and the variations on wavetraps, variometers, and such? I have one  
book on crystal sets I purchased from Lindsay Publications. (Do they  
still exist?). Any other recommendations? BTW, my first crystal  
set was cobbled together on the workbench - a B&W air wound coil,  
a 1N34 diode, tuning cap, and a Trimm headphone. Picked up plenty  
of shortwave which was really neat...

73's de AA9IL  
Mike Kana

From boatanchors@theporch.com Wed Jun 7 14:54:57 1995  
Date: Wed, 7 Jun 1995 09:54:57 -0500  
Message-Id: <PMX-TERM-2.02-bsm2ee1-thaake-235>  
From: thaake@bsm2ee1.attmail.com (thaake)  
Subject: Promotion

Bobbi,

Congradulations on the promotion to CO. I would be interested in any historical comments as to types of equipment used, years that saw the changes, etc., any weird or heroic fixes above and beyond the call...at your operation.

Tim WA0TSY  
thaake@bsm2ee1.attmail.com

From boatanchors@theporch.com Wed Jun 7 06:33:30 1995

Date: Wed, 7 Jun 1995 01:33:30 -0500

Message-Id: <9506070348.AA27051@cybernetics.net>

From: ab4el@cybernetics.net (Stephen Modena)

Subject: pyrite...??? Not Galena?

Bob said:

>  
> If anyone gets into making thier own detectors, I can suggest a  
> few suppliers of pyrite crystals (or I might even be able  
> to mail out a few small ones for postage - the mine dumps around here  
> are full of 'em). Unfortunately, they are pretty small. The days of walking  
> out to a tailings pond and finding fist sized crystals are gone (too much  
> rockhounding!), but I can probably turn up some big enough to get a cat's  
> whisker on.

For nearly my whole life, I've been under the impression that hand-made  
cat's-whisker "crystals" required Galina (lead sulphide).

That info I got from my father who told me that was how it was done in  
the "early days"...and he pointed me to the "old lead mine" in  
nearby Southampton, MA (where a substantial fraction of the lead for  
shot for the Continental Army was dug).

--  
73/Steve/AB4EL ab4el@Cybernetics.NET in Raleigh, NC 35.81245N, 78.65849W

From boatanchors@theporch.com Wed Jun 7 11:39:10 1995

Date: Wed, 7 Jun 1995 06:39:10 -0500

Message-Id: <Pine.3.89.9506070656.A4514-0100000@indy2>

From: "Roberta J. Barmore" <rbarmore@indy.net>  
Subject: Re: pyrite...??? Not Galena?

Hi!

> Bob said:  
> > If anyone gets into making thier own detectors, I can suggest a  
> > few suppliers of pyrite crystals [...]

On Wed, 7 Jun 1995, Stephen Modena wrote:

> For nearly my whole life, I've been under the impression that hand-made  
> cat's-whisker "crystals" required Galina (lead sulphide). [...etc...]

Stephen, your father and Bob are \*both\* right! Many minerals can be used as "crystal" detectors, including galena and pyrite--silicon and carborundum (the latter often with a small bias battery) have been popular, but Elmer G. Osterhoudt lists some 29 minerals in the Modern Radio Labs HB-3, "Crystal Detectors." (I haven't got a copy, that's from the catalog). Everything from Anatase through enargite and molybdenite to zincite!

Quoting EO, "Before the advent of tubes, a large number of minerals and combinations were tried--always looking for a better one."

73,  
--Bobbi

From boatanchors@theporch.com Wed Jun 7 14:12:49 1995  
Date: Wed, 7 Jun 1995 09:12:49 -0500  
Message-Id: <Pine.SUN.3.91.950607064009.3584A-100000@crl2.crl.com>  
From: Steven Wilson <randyw@crl.com>  
Subject: Radio Rocks (Crystal Detectors)

The following was published last year (5/94) in the St. Louis QRP newsletter.

Radio Rocks (Crystal Dectectors)  
by Stan Wilson (AK0B)

My first radio set was a Galena detector with a steel cats whisker. The Galena was from a mine in Missouri. I still remember waiting very patiently several days for the miniature shine gray crystal to arrive (in Indiana). Within my circle of friends it was common knowledge that

the Missouri Galena was the better material to use in our detectors. I wa to learn later that the really sensitive galena came from Colorado and could be recognized by the silver needles in the surface. Having no understanding of inductance or capacitance I had built my radio set with smaller coils than my friends. I was sure the Galena was dead not being able to detect the 250 watt AM station about 20 miles from our house. However, after darkness the set became alive with stations from around the world, Radio Free Europe, the BBC and the Voice of America from everywhere. I was also treated to a couple of amateur radio stations operating AM on the 75 meter phone band in the next town.

Once bitten by the radio bug it is not easy for a ten year old to go back to the neighborhood sand lot ball game. There were just to many stations out there in the ether that required logging. So the quest begins to locate even better detectors and more sensitive headsets. Allied Radio even listed a 20,000 ohm headset that to be apart of my setup. In those days it took about five weeks of mowing grass to pay for such a headset. Soon the trees around my house were a spider web of copper wire and the water well pump had become my ground system. My mother lived in constant fear that lighting was going to consume our house in a mighty fire ball some night.

It is amazing just how many ways one can use a simple galena detector. The pressure was varied on the cats whisker, a copper whisker was used, two crystals with one as the whisker, and even batter current was connected to the crystal. In addition, the library books talked about carborundum detectors that were used by the large ocean going vessels in the early 20's. My fascination with using rocks as radios still exists today almost 50 years later. A few years ago while in Colorado I tried to locate the source of those lead-silver crystals. I wonder into a rck store in one of the gold mining ghost towns to ask about a certain silver mine to find that it had been closed for years. The lady rock hound that ran the shop remember that about ten years before I had written to her shop in search of various crystals from the area. She said the silver from a couple of mines in the area was unique in the way the lead and silver were combined. She was able to supply me with molybdenite and chalcopyrite for some of my modern day experiments.

In the early 1900's Mr. Saiki of Japan discovered that about 200 kinds of minerals could be used as wireless detectors.

What have I learne after all of those years playing with radio rocks ?

First - the proprieties of various materials were known back in the late 1880's. Germany, Japan, England and American researchers were all investigation the current voltage characteristics of various materials. If one investigates the technical papers of the day

(1900's) it will be noted that discovery and re-discovered of innumerable rectifying substances and countless combinations of various crystals and mounting existed.

Second - Rock hounds, geologists, scientists and engineers have different names for the same minerals. Peacock rocks, rainbow rocks, copper pyrite, copper ore and chalcopyrite are all basically the same mineral (Copper with Iron).

Third - About all metallic ores will work as detectors. Arkansite, Zincite, Magnetite, Galena, Iron pyrite prefer a firm contact from the cat's whisker. Bornite, Copper pyrite, Arsenical pyrite, graphite, need a very light touch. Those with impurities work better than pure mineral elements. Usually the most sensitive location being next to the impurities. Copper pyrite does not work well unless it is well-tranished, with the tarnished surface acting as a very sensitive detector.

The early researchers had to be working with point contact devices that we later discovered to be transistors. Think of what the level of technology would have been today if one of those early experimenters had realized what they were seeing in the data. There are early technical reports noting that the current in the headset was greater than that in the antenna circuit (amplification ?). The devices could be considered doped, it was reported that a tantalum cat's whisker dipped in mercury worked better if the mercury was not too clean. Chalcopyrite works poorly with both copper and brass contact points (whiskers), but excels when used with a zincite contact point (Patented as a Perikon Detector). The researchers fully understood that the flow of d.c. current improved the performance of the detectors. The Perikon improved over 20% and a galena-plumbago by 50% with an applied boasting voltage. Two different versions of the Perikon appear to exist. 1) artificial solid solution of zinc oxide in fusible silicate and 2) later zincite and copper pyrite. The well known Carborundum detector works better with Bornite (purple copper ore). Bornite always improves the detector, but will not work well by itself.

The early scientists were concerned about both the electrical flow of current and the thermo flow through the detectors. In some cases it is reported to be in reverse to each other.

Where can I obtain some of the minerals ? Right in our own back yards. Several years ago one of the technicians that I work with showed up with several pounds of iron pyrite (fools gold) that he had found near the Golder Eagle Ferry (MO). I have been told that a major vein runs through the southern Illinois and St. Louis area. Fifty miles south of St. Louis will yield galena from various rock out crops. Chalcopyrite is available in most mall Nature stores as

Peacock rocks. Recently, I have noted that the local office supply store is selling a variety of rocks (minerals) for a dish on your desk.

Regards de stan wilson, AK0B

From boatanchors@theporch.com Wed Jun 7 17:45:15 1995

Date: Wed, 7 Jun 1995 12:45:15 -0500

Message-Id: <9506071743.AA02449@ihurry.ih.att.com>

From: Michael.J.Knudsen@att.com

Subject: Re: Radio Rocks (Crystal Detectors)

Fascinating reading from Stan, AK0B -- tnx!

Twice you mention Missouri galena, and the vein that passes 50-60 mi south of St Louis. That would include the Bonne Terre Mine, which operated over a century as the largest lead mine on the planet. Didn't close until late 1960s, opened before the Civil War.

It's now half flooded and part of it is lighted and used as a Scuba dive site -- I dove it twice and it's a thrill!

I did galena crystal (Philmore kit) and razor-blade/toilet paper radios as a kid, but without much success.

Yes, I've heard it said before that solid-state electronics was right under our noses for decades, and nobody quite found it. WOnder if anyone tried two contact points, with reverse bias on the 2nd point used for the headphones? WOULDve been a BIG surprise, and early retirement to the Riviera.

The first Bell Labs transistor looked a lot like a kid's galena detector, with the "base" being the low-melting alloy blob that held the crystal, plus two point contacts. I recall reading that the 3 scientists took quite a while to figure out how the thing really worked -- holes, minority carriers, etc.

Just as Lee DeForest and cohorts took years to understand how a triode tube worked.

Sometimes I wish solid-state had lain undiscovered for another generation, but when I go play with a Sony digital ricebox I'm grateful for the little buggers. 73, mike k

From boatanchors@theporch.com Thu Jun 8 03:30:30 1995  
Date: Wed, 7 Jun 1995 22:30:30 -0500  
Message-Id: <199506080328.UAA11578@scn.org>  
From: David Barts <davidb@scn.org>  
Subject: Reading the BA list via FTP

Posting shell scripts is normally not within the charter of this list, but I think most people will agree that this shell script warrants an exception. I use it to transfer the BA digest from the FTP server once a day:

```
----- clip and save -----  
#!/bin/sh  
# getba - Get the specified (default to today's) BA digest(s) from  
#          the server.  
  
if [ $# = 0 ]  
then  
    flist=`/usr/5bin/date +19%y%m%d` .ba"  
else  
    flist=""  
    for i in "$@"  
    do  
        flist="$flist $i.ba"  
    done  
fi  
  
ftp -n <<%EOF  
open sunsite.unc.edu  
user anonymous -davidb@scn.org  
cd /pub/academic/agriculture/agronomy/electronics+computers/BOATANCHORS  
binary  
prompt off  
mget $flist  
bye  
%EOF  
----- end of file -----
```

#### Notes

The above script runs on a Sun system (should work on either SunOS 4.1.3 or Solaris 2.x). For a generic System V.3 or V.4 UNIX system, change the '/usr/5bin/date' command to simply 'date'. This script depends on features found in the System V date(1) command and won't work under most BSD-based UNIXes (sorry).

You probably should change the password found on the user line to be your own E-mail address. It's a good idea to prepend a hyphen; this

will suppress all the chatty messages from the SunSITE FTP server (which just look confusing when you're running the thing in batch mode like this).

If you run it without any arguments, it fetches today's BA digest. Any arguments are expected to be in the form yyyyymmdd and will cause the digest(s) for the day(s) specified to be transferred. (The ".ba" suffix gets tacked on automatically.)

I wrote this some months ago because I was sick of (mis-)typing the long-winded directory path to the digest files and thought others might find it useful.

--

David W. Barts (davidb@scn.org)  
REAL radios glow in the dark.

From boatanchors@theporch.com Wed Jun 7 15:34:13 1995  
Date: Wed, 7 Jun 1995 10:34:13 -0500  
Message-Id: <199506071531.KAA25227@chuck.dallas.sgi.com>  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: Schematics

Gang,

On the qrp-l list I have had some success at placing schematics at a ftp site using PostScript files.

Of course, these can be large and for the NN1G transceiver, similar to the 95 handbook takes about 395K bytes of storage. The ASCII file to generate it from my own schematic drawing routine was only 6K.

The HPGL file runs about 190K.

How about copyright issues with old schematics. Are there any?

dit dit

--

Chuck Adams K5F0 CP-60 adams@sgi.com

From boatanchors@theporch.com Thu Jun 8 03:48:08 1995  
Date: Wed, 7 Jun 1995 22:48:08 -0500  
Message-Id: <Pine.3.89.9506072044.A4140-0100000@netcom7>  
From: "Hal R. Waite" <halwaite@netcom.com>  
Subject: Slipping Dial Cords on Boatanchor Equipment (SX-28)

I am finishing up the refurb of my SX-28 and the one remaining difficulty is the tendency of the dial cord to slip on the bandspread "condenser" shaft (that is the correct nomenclature for that period).

For a quick and dirty fix in the past, I have used Belt Ease, an automotive product for squeaking fan belts. For this fine old boatanchor, I am wondering if there is a better long term solution.

Thanks in advance. Hal K4GFI/7 Las Vegas halwaite@netcom.com

From boatanchors@theporch.com Thu Jun 8 02:36:41 1995  
Date: Wed, 7 Jun 1995 21:36:41 -0500  
Message-Id: <8AAD4B7.000401B4C1.uuout@freddy.com>  
From: shaun.merrigan@freddy.com (SHAUN MERRIGAN)  
Subject: SP600 restoration help qu

On 06/06/95, CONARD MURRAY spoke about SP600 restoration help qu; I say:

CM>the cases. I want to know how to get inside the RF deck (the front CM>end that's mounted on the tuning cap box) to replace the caps residing CM>inside. It looks like a pretty difficult operation with a bunch of CM>physical dismantling required... any others out there with CM>experiences to share? =

Well, I have re-capped two SP-600's (so far) completely; RF deck and = all. I think I spent about 60-70 hours apiece on them.

General advice: 1) get a manual, one of the "good" military manuals (AN = 16-45-221/222/223) which has a complete handbook of service instructions = and illustrations. =

2) draw diagrams, take pictures to help you remember where all the =  
wires (not to mention the cogs and pinwheels) from the various =  
subassemblies go (I did this even though I had a "good" manual)

3) when you get to the RF deck removal, some people say =  
that you should to remove the small bolts that hold the grounding straps =  
to the cap frame, I say nope! Those bolts are liable to be frozen and =  
easily destroyed. On both 600's I have done, I have carefully =  
desoldered and unwrapped the grounding straps (these are flat metal =  
straps, not round wires) themselves (successfully, too) and left the =  
hardware alone. Then, the RF deck electronics can be separated from the =  
tuning caps. As for the wires that connect the stators to the band =  
switch contacts, they are easily removed by desoldering, or even =  
clipping, and completely replacing with a new lenth of wire. =

That is all I can recall at the spur of the moment, contact me via e-mail if there is anything else I can help you with. =

If anyone is counting, I just checked my SP600, and it has gold (cad??) =  
plated tuning plates for all except the set nearest the front panel. =  
These are plain copper. =

Shaun P. Merrigan  
shaun.merrigan@freddy.com  
merrigan@nyquist.ee.ualberta.ca  
3rd Year EE University of Alberta

=FE CMPQwk 1.42-R1 856 =FEWhy is "abbreviation" such a long word?

From boatanchors@theporch.com Wed Jun 7 18:34:16 1995  
Date: Wed, 7 Jun 1995 13:34:16 -0500  
Message-Id: <Chameleon.4.00.4.950607132924.grant@nq5t>  
From: Grant Youngman <gyoungma@gtetel.com>  
Subject: Re: Spray Painting

>> Had heard that Hammerite gives a good finish, and if you get it  
>> just right -- it does. Problem is it smells ... and smells ...  
>> and smells ... I have cured the cabinet several weeks in the hot  
>> Texas sun and it STILL smells .... I'm about to write the company  
>> to see if they have some kind of "anti-smell" solution.

>

>Grant,

>I painted a radio 4 months ago using the Hammerite. It looks  
>great and I have had many complements on it. Even after 4 months  
>it \*still\* smells! It looks great though and was easy to apply...

>

>Let me know if you get an anti smell idea from the company!

>

>73

>Mike, AA2UJ

>mmarmor@pluto.njcc.com

>

>

I spoke with customer service at the company that makes Hammerite.

Answer: its a solvent based paint and the only thing that will get rid of the odor is time and adequate ventilation. Normally, this would be six to eight weeks, but he said that extended time was not that unusual, depending on temperature and ventilation.

I guess we're stuck with it. Sniff ... wince ... gag. Been nice if the labeling on the can had provided a bit more information on the lingering aroma and had warned that the painted object should be left outside to cure for six months :-) before use!

I think I'll try something else next time I want to paint anything besides lawn furniture.

73 .. Grant/NQ5T -- Double Oak, TX

From boatanchors@theporch.com Thu Jun 8 02:20:59 1995  
Date: Wed, 7 Jun 1995 21:20:59 -0500

Message-ID: <9506080218.AA03323@kali>  
From: Andy Wallace <wallace@mc.com>  
Subject: T-R switches with "probes"

I would assume the "probe" is for feeding a modulation monitor scope.  
Johnson antenna tuners (the Matchbox) had the same sort of thing.

--Andy

From boatanchors@theporch.com Wed Jun 7 16:29:07 1995  
Date: Wed, 7 Jun 1995 11:29:07 -0500  
Message-ID: <9506071113.D4505P0@slacc.com>  
From: wbrco@slacc.com  
Subject: un-subscribe

un-subscribe

From boatanchors@theporch.com Wed Jun 7 12:20:58 1995  
Date: Wed, 7 Jun 1995 07:20:58 -0500  
Message-ID: <950607121730\_71333.144\_DHQ45-1@CompuServe.COM>  
From: don merz <71333.144@compuserve.com>  
Subject: Vibroplex FS

#### Vibroplex For Sale

CONTACT: Don Merz, N3RHT: 47 Hazel Drive, Pittsburgh, PA 15228.  
412-234-8819 (weekdays, EST or leave a message anytime).  
71333.144@compuserve.com

Vibroplex Original Bug s/n 64713. Japanned black base, plated and red parts.  
The tag is a brass plate with no "bug" symbol and a 253 Broadway New York  
address--10 patents are listed. Dirty with some light surface rust but  
complete and easily restored. Pinstriping is 60% - 70% intact with upper  
left corner almost completely worn away. The thumb plastic is not original.  
1926-vintage. \$140 or best offer.

Vibroplex Bug s/n 117353. Lightning model with black wrinkle base with  
chrome parts and black plastic. Brass name tag has bug logo and 796  
Fulton Street, Brooklyn NY address--6 patents are listed. All original and  
immaculate. With original green velvet-lined locking leatherette case with  
handle. Like new. 1940's vintage? \$125 or best offer.

Vibroplex Bug s/n 212842. Original model with chrome base, chrome parts and

red plastic. Brass name tag has bug logo and 833 Braoadway NY address--no patents are listed--it just says "patented." All original and excellent. Ink stamp on bottom says "Original Deluxe." Late 50's or early 60's vintage. \$90 or best offer

From boatanchors@theporch.com Wed Jun 7 18:15:53 1995

Date: Wed, 7 Jun 1995 13:15:53 -0500

Message-Id: <51195.owen@apollo.eeel.nist.gov>

From: "James C. Owen, III" <owen@apollo.eeel.nist.gov>

Subject: RE: Voltage Standards

In message Tue, 6 Jun 1995 14:11:15 -0500,  
adams@chuck.dallas.sgi.com (chuck adams) writes:

>  
>  
>  
>  
> I'm looking for some everyday critter that I could use to  
> test voltmeters, etc. Is there something like a CdHg battery  
> source that is good to four places?? Cheap and off the shelf?  
>  
> Not an obsession, but wanted anyway.  
>  
> Is this your area withing NIST?

Sorry but not my area. I'm currently doing standards design measurements at the 1 micrometer and below level on semiconductors (mainly IC) line width's and photomask overlay error determination procedures. Also have a lot of experience with nuclear radiation and linear accelerator instrumentation but no experience in voltage standards. However, there are a number of commerical reference chips sold today that most likely are good to 3-4 places. The PMI chips REF-01 to REF-10 come to mind. The REF-10 is a 10 volt precision voltage reference. Set the input to about 15V and get 10Vout that is adjustable by +/- 3% with a 50ppm/1000hr stability. If you need other voltages lower make a simple voltage divider. You might try to get a PMI databook. Precision Monolithics Inc. 1500 Space Park Dr. P.O. Box 58020 Santa Clara, Ca 95052-8020. 408-727-9222. This address from my 1988 catalog, hope its still the same. Allied Electronics--Newark Electronics--Pioneer are distributors and they may give out the Databooks. Hope this helps. BTW Newark list the REF-01 and REF-02 at about \$6.00.

James C. Owen, III  
National Institute of Standards & Technology (NIST)  
Bldg 225/B360

Gaithersburg, MD 20899  
1-301-975-5623

From boatanchors@theporch.com Wed Jun 7 18:38:30 1995  
Date: Wed, 7 Jun 1995 13:38:30 -0500  
Message-Id: <v02110104abfb9e70eb7d@[140.243.30.128]>  
From: steve@hi.com (Steve Byan)  
Subject: RE: Voltage Standards

In message Tue, 6 Jun 1995 14:11:15 -0500,  
adams@chuck.dallas.sgi.com (chuck adams) writes:  
> I'm looking for some everyday critter that I could use to  
> test voltmeters, etc. Is there something like a CdHg battery  
> source that is good to four places?? Cheap and off the shelf?

Horowitz and Hill's "Art of Electronics" (nothing about tubes, but highly recommended reading for all electronics hackers) notes that a standard mercury cell is 1.30 volts open-circuit to 1%. Not good to 4 decimal places, but good enough for home-calibration of something with an analog readout.

Unfortunately, it seems that mercury batteries are somewhat hard to buy here in the Northeast - something about environmental regulations or something like that. Silver oxide is supposed to be almost as good, but H & H don't give a tolerance on the cell voltage. Fresh carbon-zinc cells seem to be 1.60 open-circuit, until you pull a little bit of current from them, but it's hard to know how fresh they are, and I've no idea of the tolerance.

I've been wrestling with the question of how to home-calibrate the test equipment I've been accumulating. Some kind of standard-cell seems to be good for DC, but it still leaves the question of how to calibrate AC voltmeters. I picked up an old Weston 2-range AC voltmeter (15 and 30 volts) at an antique radio swapmeet for \$15. The scale says it's accurate to 0.5%, but I suppose the copper-oxide rectifier might not be that good anymore. It agrees with the calibration of my HP-400H, for what that's worth. (I've no idea where or when the HP-400H was last calibrated.) I figured it's the best reference I have, so I calibrated my Heath VTVM to it.

Regards,  
-Steve

Steve Byan internet: steve@hi.com  
Hitachi Computer Products (America), Inc.

1601 Trapelo Road  
Waltham, MA 02154

phone: (617) 890-0444  
FAX: (617) 890-4998

From boatanchors@theporch.com Wed Jun 7 13:20:39 1995  
Date: Wed, 7 Jun 1995 08:20:39 -0500  
Message-Id: <9506071318.AA08242@speckle.ncsl.nist.gov>  
From: morgan@speckle.ncsl.nist.gov (Roy Morgan)  
Subject: VT-51 - what is it?, VT-20 info.

Anybody got a cross reference list handy? What is the VT-51?

BTW, here's info on the unlisted VT-20 I got from Tom Dunker in Norway:

- late twenties UK-made tubes. They have the British B4 base/socket.
- rough parameters for recommended class A voltage amp service are:

2V filament  
Grid bias: -7.5V  
Plate volts: 150V  
Plate current: 11 mA  
gm: 2.2 mA/V  
mu: 9

Possibly designed to be used as a (telephone) line driver tube.

-- Roy --  
Roy Morgan / Tech A-266 / NIST / Gaithersburg MD 20899  
(National Institute of Standards and Technology, formerly NBS)  
301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov  
---

From boatanchors@theporch.com Wed Jun 7 22:41:24 1995  
Date: Wed, 7 Jun 1995 17:41:24 -0500  
Message-Id: <n1409575729.87555@mssmailgw1.arlut.utexas.edu>  
From: "rohre" <rohre@arlut.utexas.edu>  
Subject: RE: WANT: Old HP X-Y recorder pens

Have you tried HP sales offices? There is also "HP Direct" for plotter supplies. This number is NOT discontinued per the HP Logistics book, so I think

you can order packages of like 5 pens of a color. They are foil sealed in later models to keep a long time, like years. I used to have some, but are not easily found here, just because I gave the plotter to another group. For test and measurement products a technical assistance (free service) no. is 1-800-452-4844. Ask them if the pens are to be ordered from which of the parts and supply nos., for I got three 1-800's here in the book, Medical products, that some recorders are, analytical, and all others, for parts and supplies--that may be it, also try 1/800-227-8164. Have those HP pen part nos. handy. They do credit card orders at HP Direct, but I do not know the minimum order if any. BTW, the HP paper is to be preferred to get your pens to last a long time, and I mean that it is a dramatic difference, so you might as well get HP paper same source.

Obligatory BA tie in: These plotters are used for frequency spectrum occupancy plots, or any other frequency vs. amplitude plotting, if connected to a spectrum analysis receiver.--73, Stuart (I did not realize these were "old" plotters, how time flies!)

---

From boatanchors@theporch.com Wed Jun 7 18:04:34 1995  
Date: Wed, 7 Jun 1995 13:04:34 -0500  
Message-ID: <Pine.3.89.9506071222.A9508-0100000@indy1>  
From: "Roberta J. Barmore" <rbarmore@indy.net>  
Subject: Re: [distributing] schematics

Hi!

Mike spoke of the superlarge schematic for a newer Sony SWL receiver, adding that it was both clear and was drawn here in the States.

I don't know if the two necessarily go hand-in-hand! The (now aging) Pioneer RT-707 that graces my hi-fi installation at home came with a very good schematic--and they didn't remember to remove all of the (various) Japanese characters when relabelling it for the English edition. OTOH, the prints for the RCA transmitter they pay me to fix are unclear rats nests and anyone working from them sight unseen is advised to bring their lunch--maybe dinner, too.

On this topic, if there's a contest based on nationality, I'd nominate the British, who generally do a first-rate job of producing easy to follow schematics. (I'm not alone in this--see Arthur C. Clarke's fictionalization of his wartime work on GCA radar, "Glide Path," though Clarke might be mildly biased).

Here in the 'States, Radio magazine's B. A. Ontiveros, W6FFF, gets my vote as the top radio draftsman of all time. Always crystal clear,

logically laid-out and sensible, at a time when even the ARRL was apt as not to run signal flow right-to-left, or simply convoluted past all reason.  
(Does anyone know what happened to B.A. during/after the war?)

Many of the various and sundry CAD programs create results that are simply awful, especially if the user relies too much on the auto-router. There's no substitute for thinking things through, at least so far.

I've followed the distributing-schematics thread with bemusement; I'm terribly literal-minded and can't image not having hardcopy to work from! The postal services do an adequate job of distributing those for my purposes--and it's a lot harder to lose them to a power glitch. :)  
(Which isn't to say that paper's not doomed, it is; I'm hoping to ignore that along with many other "great advances" of our age, at least in my own home and on my own time!) The Internet's nice but it's not the whole world, heretical as that may seem.

73,

--Bobbi

(Had I better wear the fire-retardant outfit today?)

From boatanchors@theporch.com Wed Jun 7 22:37:11 1995  
Date: Wed, 7 Jun 1995 17:37:11 -0500  
Message-Id: <9506072235-AA20271@ihurry.ih.att.com>  
From: Michael.J.Knudsen@att.com  
Subject: Re: [distributing] schematics

Re Bobbi's comments: First, I will go to the paperless office (tm) and paperless shcematics and paperless manuals, etc etc IF AND WHEN I can scribble my own notations, inlcuding but not limited to typable text, anywhere I want to. Here at BTL we can view all the "paperless" docs we want on our Sun screens, but we're forever printing out hardcopy to take into the lab bench and scribble on.

I don't think any professional desktop publisher has addressed this basic problem. I can pull the Mona Lisa out of some art museum on the Web, but I can't draw a mustache on her -- that's not waht the "markup" in HTML means.

British schematics, like British radio gear, are so scarce in the US that I've never seen such a schematic. German (Grundig) schematics are nice, but as crowded, dense, and cluttered as the radio chassis themselves, and use funny variants for some parts (rectangles for resistors, which are easier to draw and can be partially blackened in to indicate wattage) -- I think some Brits do that too.

I have several collection sof early radio schematics (for working on radios

I have), and it's amusing to see the differences in styles, quality, and symbols. Atwater Kent wins the prize for everything, while Midwest (maker of great '30s consoles) gets the booby prize for signals flowing every direction at once.

At the Labs I learned proper drafting conventions, and remember some of the early attempts at computer-aided shcmeatics, and also some drawings by humans on a tight schedule. Let' just say these "documented" the circuit, but they sure didn't "describe" it to some poor clod trying to understand or trouble-shoot it.

BTW, there's much to be said for the modern practice of drawing just portions of a circuit per sheet, and then giving singals names (yes, NAMES, wish radio folks would catch that idea) with reference stubs to other sheets.

The R390A manual is a good start -- just add names and sheet references and it would be modern. Beats having to take your Sony schematic down to the gas station to get it re-folded :-)

--,mike k